What is claimed is:

1. A lentiviral vector comprising an attachment incompetent fusogenic polypeptide and a heterologous targeting polypeptide.

2. The lentiviral vector of claim 1, wherein said attachment incompetent fusogenic polypeptide comprises lentivirus gp41, a binding defective influenza hemagglutinin polypeptide, or a functional fragment thereof.

3. The lentiviral vector of claim 1, wherein said heterologous targeting polypeptide comprises a chimeric polypeptide.

4. The lentiviral vector of claim 3, wherein said chimeric polypeptide comprises a membrane attachment domain and a targeting domain.

5. The lentiviral vector of claim 4, wherein said membrane attachment domain comprises a transmembrane domain of CD40.

6. A lentiviral packaging construct, comprising a nucleic acid encoding trans-acting factors sufficient for lentiviral vector generation and an attachment incompetent fusogenic polypeptide.

7. The lentiviral packaging construct of claim 6, further comprising a nucleic acid sequence encoding heterologous targeting polypeptide.

8. The lentiviral packaging construct of claim 6, wherein said fusogenic polypeptide comprises lentivirus gp41, a binding defective influenza hemagglutinin polypeptide, or a functional fragment thereof.

9. The lentiviral packaging construct of claim 7, wherein said heterologous targeting polypeptide comprises a chimeric polypeptide.

10. The lentiviral packaging construct of claim 9, wherein said chimeric polypeptide comprises a membrane attachment domain and a targeting domain.

11. The lentiviral packaging construct of claim 10, wherein said membrane attachment domain comprises a transmembrane domain of CD40.

12. The lentiviral packaging construct of claim 6, wherein said trans-acting factor sufficient for lentiviral vector generation comprise lentiviral *gag*, *pol* and *rev*, or a functional fragment thereof.

13. The lentiviral packaging construct of claim 12, wherein at least one trans-acting factor sufficient for lentiviral vector generation is encoded on a separate nucleic acid vector.

14. A lentiviral packaging system having at least two nucleic acid vectors, comprising:

(a) a first nucleic acid vector comprising a packaging construct encoding a trans-acting factor for lentiviral vector generation, and

(b) a second nucleic acid vector encoding an attachment incompetent fusogenic polypeptide, said at least two vectors together encoding trans-acting factors sufficient for lentiviral vector generation.

15. The lentiviral packaging system of claim 14, further comprising a nucleic acid sequence encoding a heterologous targeting polypeptide.

16. The lentiviral packaging system of claim 15, wherein said heterologous targeting polypeptide is encoded on a third nucleic acid vector.

17. The lentiviral packaging system of claim 14, wherein said fusogenic polypeptide comprises lentivirus gp41, a binding defective influenza hemagglutinin polypeptide, or a functional fragment thereof.

18. The lentiviral packaging system of claim 15, wherein said heterologous targeting polypeptide comprises a chimeric polypeptide.

19. The lentiviral packaging system of claim 18, wherein said chimeric polypeptide comprises a membrane attachment domain and a targeting domain.

20. The lentiviral packaging system of claim 19, wherein said membrane attachment domain comprises a transmembrane domain of CD40.

21. The lentiviral packaging system of claim 14, wherein said trans-acting factor sufficient for lentiviral vector generation comprise lentiviral *gag*, *pol* and *rev*, or a functional fragment thereof.

22. The lentiviral packaging construct of claim 21, wherein at least one trans-acting factor sufficient for lentiviral vector generation is encoded on a separate nucleic acid vector.

23. A lentiviral gene delivery system having at least three nucleic acid vectors, comprising:

(a) a first nucleic acid vector comprising a packaging construct encoding a trans-acting factor for lentiviral vector generation;

(b) a second nucleic acid vector comprising a fusogenic construct encoding an attachment incompetent fusogenic polypeptide, and

(c) a third nucleic acid vector comprising a lentiviral vector genome encoding lentiviral cis sequences sufficient for vector genome transduction, said at least three vectors together encoding trans-acting factors sufficient for lentiviral vector generation.

24. The lentiviral gene delivery system of claim 23, further comprising a nucleic acid sequence encoding a heterologous targeting polypeptide.

25. The lentiviral gene delivery system of claim 24, wherein said heterologous targeting polypeptide is encoded on a fourth nucleic acid vector.

26. The lentiviral gene delivery system of claim 23, wherein said fusogenic polypeptide comprises lentivirus gp41, a binding defective influenza hemagglutinin polypeptide, or a functional fragment thereof.

27. The lentiviral gene delivery system of claim 24, wherein said heterologous targeting polypeptide comprises a chimeric polypeptide.

28. The lentiviral gene delivery system of claim 27, wherein said chimeric polypeptide comprises a membrane attachment domain and a targeting domain.

29. The lentiviral gene delivery system of claim 28, wherein said membrane attachment domain comprises a transmembrane domain of CD40.

30. The lentiviral gene delivery system of claim 23, wherein said trans-acting factor sufficient for lentiviral vector generation comprise lentiviral *gag*, *pol* and *rev*, or a functional fragment thereof.

31. The lentiviral gene delivery system of claim 30, wherein at least one trans-acting factor sufficient for lentiviral vector generation is encoded on a separate nucleic acid vector.

32. The lentiviral gene delivery system of claim 23, wherein said third vector further comprises a heterologous nucleic acid.

33. The lentiviral gene delivery system of claim 23, wherein said cis sequences sufficient for vector genome transduction are selected from the group consisting of a packaging signal, a genome integration sequence, a replication promoter, post-transcriptional cis sequences, post-translational cis sequences, and an expression cassette.

34. A method of transducing a cell, comprising contacting a cell expressing a target receptor with an effective amount of a lentiviral vector having a cell surface attachment incompetent fusogenic polypeptide and a heterologous targeting polypeptide under conditions sufficient for said lentiviral vector to fuse with said cell.

35. The method of claim 34, wherein said attachment incompetent fusogenic polypeptide comprises lentivirus gp41, a binding defective influenza hemagglutinin polypeptide, or a functional fragment thereof.

36. The method of claim 34, wherein said heterologous targeting polypeptide comprises a chimeric polypeptide.

37. The method of claim 36, wherein said chimeric polypeptide comprises a membrane attachment domain and a targeting domain.

38. The method of claim 37, wherein said membrane attachment domain comprises CD40.

39. The method of claim 34, wherein said lentiviral vector further comprises a lentiviral vector genome encoding a heterologous polypeptide.

40. A method of targeting a gene to a cell or tissue, comprising administering to a subject having a cell or tissue expressing a target receptor with an effective amount of a lentiviral vector having a cell surface attachment incompetent fusogenic polypeptide and a heterologous targeting polypeptide under conditions sufficient for said lentivirus to bind to said target receptor.

41. The method of claim 40, wherein said attachment incompetent fusogenic polypeptide comprises lentivirus gp41, a binding defective influenza hemagglutinin polypeptide, or a functional fragment thereof.

42. The method of claim 40, wherein said heterologous target polypeptide comprises a chimeric polypeptide.

43. The method of claim 42, wherein said chimeric polypeptide comprises a membrane attachment domain and a targeting domain.

44. The method of claim 43, wherein said membrane attachment domain comprises CD40.

45. The method of claim 40, wherein said lentiviral vector further comprises a lentiviral vector genome encoding a heterologous polypeptide.

46. The method of claim 40, wherein said target receptor is expressed on the surface of a cell or tissue selected from group consisting of central nervous system, peripheral nervous system, pancreas, lung, liver, and hematopoietic system.

47. The method of claim 46, wherein said subject is selected from the group consisting of mammal, human, murine, drosophila, and zebrafish.